

## 3.14 Transportation

This chapter describes the current transportation system in the SCAG region, discusses the potential impacts of the RTP on transportation, identifies mitigation measures for the impacts, and evaluates the residual impacts.

### Environmental Setting

The Southern California transportation system is a complex intermodal network designed to carry both people and goods. It consists of roads and highways, public transit, paratransit, bus and rail, freight railroads, airports, seaports and intermodal terminals. The regional highway system consists of an interconnected network of local streets, arterial streets, freeways, carpool lanes and toll roads. This highway network allows for the operation of private autos, carpools, private and public buses, and trucks. Non-motorized transportation modes, such as bicycles share many of these facilities. The regional public transit system includes local shuttles, municipal and area-wide public bus operations, rail rapid transit operations, regional commuter rail services, and inter-regional passenger rail service. The freight railroad network includes an extensive system of private railroads and several publicly owned freight rail lines serving industrial cargo and goods. The airport system consists of commercial, general, and military aviation facilities serving passenger, freight, business, recreational, and defense needs. The region's seaports support substantial international and interregional freight movement and tourist travel. Intermodal terminals consisting of freight processing facilities serve the function of transfer, storage and distribution of goods. The transportation system supports the region's economic needs as well as the demand for personal travel.

The regional transportation system is currently at capacity operations during peak periods. The highway system shows substantial freeway congestion in the morning and evening peak period, with random episodes of incident-related (i.e. accident) congestion throughout the day. The transit system is experiencing substantial overcrowding on a number of core urban bus routes with significant excess capacity on most off-peak and peripheral routes. Rail transit is very close to capacity during peak hours on the Metro Blue Line, Metro Red Line, and Metro Gold Line, while the Metro Green Line generally has some capacity available. Commuter rail service is at or near capacity during peak periods as the routes approach Union Station in downtown Los Angeles, but suburb-to-suburb capacity is available on most lines.

### Transportation Planning in the SCAG Region

Numerous agencies are responsible for transportation planning and investment decisions within the SCAG region. SCAG helps integrate the transportation-planning activities in the region to ensure a balanced, multi-modal plan that meets regional as well as county, subregional, and local goals.

**Table 3.14-1** identifies local, state and federal governmental agencies that participate in the development of the Regional Transportation Plan. Seven major entities and agencies are involved

**TABLE 3.14-1  
PARTIES DIRECTLY INVOLVED IN THE DEVELOPMENT OF THE REGIONAL TRANSPORTATION PLAN**

<b>County Transportation Commissions / Transportation Sales Tax Commission</b>		
Imperial (IVAG)	Orange (OCTA)	San Bernardino (SanBag)
Los Angeles (LACMTA)	Riverside (RCTC)	Ventura (VCTC)
<b>Subregions/ Councils of Governments</b>		
Arroyo Verdugo Cities		Orange County COG
Coachella Valley Association of Governments		San Bernardino County Associated Governments
Gateway Cities COG		San Gabriel Valley Association of Governments
Imperial Valley Association of Governments		South Bay Cities COG
Las Virgenes-Malibu-Conejo COG		Ventura County Council of Governments
City of Los Angeles		Western Riverside County COG
North Los Angeles		Westside Cities COG
<b>Local and County Implementing Agencies</b>		
Caltrans District Offices		Port Authorities
Airport Authorities		Transit / Rail Operators
Other Owners, Operators and Implementing Agencies		
<b>Resource / Regulating Agencies</b>		
US Department of Transportation		US Environmental Protection Agency
• Federal Aviation Administration		California Air Resources Board
• Federal Highway Administration		California Department of Transportation
• Federal Railroad Administration		California Environmental Protection Agency
• Federal Transit Administration		Air Districts in SCAG Region
<b>Tribal Governments</b>		
Agua Caliente Band of Cahuilla Indians		Morongo Band of Mission Indians
Augustine Band of Mission Indians		Pechanga Band of Luiseno Indians
Cabazon Band of Mission Indians		Ramona Band of Mission Indians
Cahuilla Band of Mission Indians		San Manuel Band of Mission Indians
Chemehuevi Reservation		Santa Rosa Band of Mission Indians
Colorado River Reservation		Soboba Band of Luiseno Indians
Fort Mojave Indian Tribe		Torres-Martinez Desert Cahuilla Indians
Fort Yuma Reservation		Twentynine Palms Band of Mission Indians
<b>Other private, Non-profit organizations, interest groups and Tribal Nations</b>		
SOURCE: SCAG 2007 <i>Draft 2008 Regional Transportation Plan</i> , Los Angeles, CA.		

including SCAG as the designated Metropolitan Planning Organization (MPO), the County Transportation Commissions (CTCs), Sub-regional Councils of Governments (COGs), local and county governments, transit and transportation owners, operators and implementing agencies, Resource / Regulating agencies and other private non-profit organizations, interest groups and tribal nations.

Each of the six counties in the SCAG region has a Transportation Commission or Authority with the exception of Imperial County, where the Imperial Valley Association of Governments (IVAG) serves as the regional countywide transportation agency. These agencies are charged with countywide transportation planning activities, allocation of locally generated transportation revenues and, in some cases, operation of transit services. In addition, there are 14 subregions (COGs) within the SCAG region which are groups of cities and communities geographically clustered (sometimes comprising an entire county), which work together to identify, prioritize, and seek transportation funding for needed investments in their respective areas.

### ***Congestion Management Programs (CMP)***

In order to meet federal certification requirements, SCAG and the county Congestion Management Agencies (CMAs) have worked together to develop a Congestion Management Program (CMP) process for the region. In the SCAG region, the CMS is comprised of the combined activities of the RTP, the CMP and the Regional Transportation Improvement Program (RTIP).

Under California law, CMPs are prepared and maintained by the CMAs. The Los Angeles County Metropolitan Transportation Authority (Metro), Orange County Transportation Authority (OCTA), Riverside County Transportation Commission (RCTC), San Bernardino Associated Governments (SANBAG), and Ventura County Transportation Commission (VCTC) are the designated CMAs of each county and are subject to state requirements. While Imperial County is not subject to state CMP requirements, CMP-related activities there are accomplished through the development of the RTP and the RTIP by the Imperial Valley Associated Governments (IVAG).

### ***Congestion Management Process***

In addition to SCAG's RTP and RTIP, the key elements of the federal Congestion Management Process are addressed through the counties CMPs. Because the magnitude of congestion and degree of urbanization differ among the counties, each CMP differs in form and local procedure. By state law, all CMPs perform the monitoring and management functions shown below which also fulfill the federal CMP requirements.

- a) Highway Performance – Each CMA monitors the performance of an identified highway system. This monitoring allows each county to track how their system, and its individual components, is performing against established standards, and how performance changes over time.
- b) Multi-Modal Performance – In addition to highway performance, each CMP contains an element to evaluate the performance of other transportation modes including transit.
- c) Transportation Demand Management (TDM) – Each CMP contains a TDM component geared at reducing travel demand and promoting alternative transportation methods.

- d) Land Use Programs and Analysis – Each CMP incorporates a program for analyzing the effects of local land use decisions on the regional transportation system.
- e) Capital Improvement Program (CIP) – Using data and performance measures developed through the activities identified above, each CMP develops a CIP. This becomes the first step in developing the County Transportation Improvement Program (TIP). Under state law, projects funded through the RTIP must first be contained in the county CIP.
- f) Deficiency Planning – The CMP contains provisions for “deficiency plans” to address unacceptable levels of congestion. Deficiency plans can be developed for specific problem areas or on a system-wide basis. Projects implemented through the deficiency plans must, by statute, have both mobility and air quality benefits. In many cases, the deficiency plans capture the benefits of transportation improvements that occur outside the county TIPs and RTIP such as non-traditional strategies and/or non-regionally significant projects.

The regional transportation planning process and the county congestion management process should be compatible with one another. To ensure consistency, SCAG and the CMAAs have developed the Regional Consistency and Compatibility Criteria for CMPs. Information on the CMP activities and resulting data is updated on a biennial basis by each CMA and supplied to SCAG and the respective air quality management district.

## Commute Patterns and Travel Characteristics

The existing transportation network serving the SCAG region supports the movement of people and goods. On a typical day in the 5-county region (excluding Imperial County), the transportation network supports a total of approximately 380.3 million vehicle miles of travel (VMT) and 12.5 million vehicle hours of travel (VHT). Of this total, over half occur in Los Angeles County and less in Orange County, San Bernardino County, Riverside County, Ventura County and Imperial County, respectively. A detailed summary of existing VMT and VHT for the region and five counties is presented in **Table 3.14-2**.

Much of the existing travel in the SCAG region takes place during periods of congestion, particularly during the morning and evening peak periods (defined as 6:00 AM to 9:00 AM and 3:00 PM to 7:00 PM, respectively). Congestion can be quantified as the amount of travel that takes place in delay (vehicle hours of delay or VHD) and, alternately, as the percentage of all travel time that occurs in delay (defined as the travel time spent on the highway due to congestion, which is the difference between VHT at free-flow speeds and VHT at congested speeds). **Table 3.14-3** presents the existing (2008) travel delays and percent of regional VHT in delay by County on freeways and arterials. As shown in **Table 3.14-3**, regional travel time in delay represents approximately 30% of all daily, 33% of all AM peak period, and 42% of all PM peak period travel times.

The average vehicle home-to-work trip duration in each county is generally similar while a greater range of average work distances is found in the different counties of the region (from a low of 8.9 miles in Imperial County to a high of 17.3 miles in San Bernardino County). Home-to-work trip duration and distance are both greater for the inland counties of Riverside and San Bernardino, reflecting regional housing and employment distribution patterns.

**TABLE 3.14-2  
SUMMARY OF EXISTING (2008) DAILY VEHICLE MILES & PERCENT VEHICLE HOURS OF TRAVEL**

County	Vehicle Miles of Travel (VMT)						Vehicle Hours of Travel (VHT)					
	AM Peak Period		PM Peak Period		Daily		AM Peak Period		PM Peak Period		Daily	
	Miles	% of Region	Miles	% of Region	Miles	% of Region	Hours	% of Region	Hours	% of Region	Hours	% of Region
Imperial	1,203,002	1%	1,974,330	1%	5,951,285	1%	26,799	1%	42,908	1%	125,695	1%
Los Angeles	44,097,050	51%	74,275,694	51%	218,664,857	51%	1,661,703	56%	3,408,044	58%	7,939,505	56%
Orange	14,960,934	17%	24,924,680	17%	73,375,213	17%	540,337	18%	1,008,980	17%	2,448,238	1%
Riverside	10,160,449	1%	16,491,836	11%	50,871,194	12%	300,262	10%	576,603	10%	1,441,957	10%
San Bernardino	12,172,756	14%	10,160,449	7%	61,144,294	14%	335,406	11%	618,136	11%	1,607,071	11%
Ventura	3,983,646	5%	6,566,736	5%	19,171,558	4%	117,949	4%	223,796	4%	555,626	4%
<b>Total</b>	<b>86,577,837</b>	<b>100%</b>	<b>144,287,611</b>	<b>100%</b>	<b>429,178,401</b>	<b>100%</b>	<b>2,982,456</b>	<b>100%</b>	<b>5,878,467</b>	<b>100%</b>	<b>14,118,092</b>	<b>100%</b>

SOURCE: SCAG 2007 *Regional Travel Demand Model*. SCAG, Los Angeles, CA

**TABLE 3.14-3  
SUMMARY OF EXISTING (2008) DELAY AND WORK TRIP LENGTH**

County	Vehicle Hours of Delay			% of Travel in Delay			Average Home-to-Work Trip Distance (miles)	Average Home-to-Work Trip Duration (minutes)	
	AM Peak Period	PM Peak Period	Daily	AM Peak Period	PM Peak Period	Daily	Vehicle Trips (AM Only)	Vehicle Trips (AM Only)	Transit Trips (AM only)
Imperial	3,153	4,394	10,119	12%	10%	8%	8.88	13.57	46.87
Los Angeles	589,639	1,544,152	2,666,137	35%	45%	34%	12.27	27.6	55.55
Orange	192,894	417,076	752,942	36%	41%	31%	11.39	23.9	59.82
Riverside	88,386	227,588	390,042	29%	39%	27%	16.53	32.6	61.84
San Bernardino	83,691	196,849	349,615	25%	32%	22%	17.33	34.9	65.66
Ventura	30,356	77,335	132,075	26%	35%	24%	13.46	25.9	74.07
<b>Total</b>	<b>988,119</b>	<b>2,467,394</b>	<b>4,300,930</b>	<b>33%</b>	<b>42%</b>	<b>30%</b>	<b>13.1</b>	<b>27.8</b>	<b>56.47</b>

SOURCE: SCAG 2007 *Regional Travel Demand Model*. SCAG, Los Angeles, CA.

Map **3.14-1** in the map section at the end of this document shows PM peak period congestion delay on the regional freeway system. Major portions of the system are extremely congested during the PM peak period, particularly in Los Angeles and Orange Counties and the areas immediately to the east and west. A substantial portion of PM peak period travel in each county takes place in delay, ranging from a low of 10% in Imperial County to a high of 45% in Los Angeles County, as indicated in **Table 3.14-3**.

Based on average accident rates provided by Caltrans, transportation-related fatalities occur at an overall rate of 1.2 fatalities per one hundred million passenger miles traveled, taking into account the varying accident rates on different facility types (freeway, arterials) and travel modes (bus transit, rail transit). These specific accident rates and the resulting estimate of region-wide accidents are detailed in **Table 3.14-4**, below.

**TABLE 3.14-4**  
**TOTAL VEHICLE FATALITIES, 2005**

County	Fatalities	Fatalities per 100 million Vehicle Miles Traveled	Vehicle Miles Traveled (100 millions)
<b>Highways</b>			
Imperial	46	2.6	17.8
Los Angeles	745	1.0	779.7
Orange	205	0.8	252.9
Riverside	333	2.1	157.7
San Bernardino	425	2.2	195.2
Ventura	71	1.1	67.0
Total SCAG Region	1,825	1.2	1,470.3
<b>Transit</b>			
Imperial	0	—	—
Los Angeles	12	11.3	1.06
Orange	0	—	0.33
Riverside	0	—	0.10
San Bernardino	0	—	0.11
Ventura	0	—	0.02
Metrolink	11	122.2	0.09
Total SCAG Region	23	13.4	1.71

SOURCE: SCAG 2007.

Of the current total daily trips in the SCAG region, approximately 33.9% are a.m. trips, likely home to work trips. Unlike personal trips, commute trips are generally non-discretionary; i.e., they must be made at a specific time and to a specific location. The current average home-to-work trip in the region is 13.7 miles long. A summary of home-to-work trip characteristics by county is also presented in **Table 3.14-5**.

Public transit in all forms (including school buses) carries approximately 2.7% of all trips in the SCAG region. Of these, the greatest number of travelers is carried by buses, with lesser patronage on Metro Rail, paratransit, commuter rail and other forms of public transit services. Work trips made via public transit account for 4.04% of all home-to-work trips in the region, as detailed in **Table 3.14-5**.

**TABLE 3.14-5  
EXISTING (2008) TRAVEL MODE SPLIT (% OF COUNTY TOTAL)**

County	Person Trip Type	Drive Alone	2 Person Carpool	3 Person Carpool	Auto Passenger Trip	Transit	Non-Motorized	Total
Imperial	Home-Work/Univ	77.25%	5.74%	1.49%	9.37%	0.20%	5.95%	100.00%
	All Daily Trips	41.58%	11.22%	6.12%	26.45%	1.32%	13.31%	100.00%
Los Angeles	Home-Work/Univ	70.14%	6.28%	1.64%	10.27%	6.68%	5.00%	100.00%
	All Daily Trips	39.77%	11.23%	6.31%	27.11%	3.40%	12.17%	100.00%
Orange	Home-Work/Univ	79.01%	4.94%	1.29%	8.09%	2.14%	4.53%	100.00%
	All Daily Trips	44.86%	10.36%	5.93%	25.30%	1.96%	11.60%	100.00%
Riverside	Home-Work/Univ	76.83%	5.57%	1.76%	9.88%	0.99%	4.96%	100.00%
	All Daily Trips	40.85%	10.66%	7.00%	28.25%	1.55%	11.69%	100.00%
San Bernardino	Home-Work/Univ	74.91%	5.99%	2.00%	10.90%	1.50%	4.71%	100.00%
	All Daily Trips	39.87%	11.06%	7.18%	29.10%	1.81%	10.97%	100.00%
Ventura	Home-Work/Univ	81.10%	4.51%	1.35%	7.80%	0.73%	4.52%	100.00%
	All Daily Trips	45.43%	9.89%	6.04%	25.06%	1.36%	12.22%	100.00%
Total of 6 Counties	Home-Work/Univ	73.61%	5.83%	1.60%	9.74%	4.35%	4.86%	100.00%
	All Daily Trips	41.09%	10.93%	6.40%	27.02%	2.66%	11.90%	100.00%

SOURCE: SCAG 2007 *Regional Travel Demand Model*, Los Angeles, CA

## Regional Freeway, Highway, and Arterial System

### *Regional Freeway and Highway System*

The regional freeway and highway system shown in **Map 3.14-2** in the map section at the end of this document is the primary means of person and freight movement for the region. This system provides for direct auto, bus and truck access to employment, services and goods. The network of freeways and state highways serves as the backbone of the system offering very high capacity limited-access travel and serving as the primary heavy-duty truck route system. The components of the regional highway and freeway system are included in **Table 3.14-6**.

**TABLE 3.14-6**  
**EXISTING (2008) REGIONAL FREEWAY ROUTE MILES AND LANE MILES BY COUNTY**

County	Freeway Route Miles	Freeway Lane Miles
Imperial	93	373
Los Angeles	639	4,624
Orange	169	1,277
Riverside	309	1,692
San Bernardino	464	2,337
Ventura	94	501
<b>SCAG total</b>	<b>1,768</b>	<b>10,804</b>

SOURCE: SCAG 2007 Regional Travel Demand Model. Los Angeles, CA.

### *Regional HOV System and Park & Ride System*

The regional HOV system consists of exclusive lanes on freeways and arterials, as well as busways and exclusive rights-of-way dedicated to the use of high-occupant vehicles. It includes lanes on freeways, ramps and freeway-to-freeway connectors. The regional HOV system is designed to maximize the person-carrying capacity of the freeway system through the encouragement of shared-ride travel modes. HOV lanes operate at a minimum occupancy threshold of either 2 or 3 persons. Many include on-line and off-line park & ride facilities, and several HOV lanes are full "transitways" including on-line and off-line stations for buses to board passengers. The current system is described in **Table 3.14-7**.

Park and ride facilities are generally located at the urban fringe along heavily-traveled freeway and transit corridors and support shared-ride trips, either by transit, by carpool or vanpool. Most rail transit stations have park and ride lots nearby. There are currently 219 park and ride lots in the SCAG region, including Metrolink station parking lots. These facilities include: 34 park and ride facilities in Orange County, 124 in Los Angeles County, 21 in Riverside County, 18 in San Bernardino County and 22 in Ventura County.<sup>1</sup>

<sup>1</sup> SCAG. (2002). *Park and Ride Inventory*. Los Angeles, CA.



**TABLE 3.14-7  
EXISTING (2008) REGIONAL HIGH OCCUPANCY VEHICLE (HOV)  
ROUTE MILES AND LANE MILES BY COUNTY**

County	HOV Centerline Miles	HOV Total Lane Miles
Imperial	0	0
Los Angeles	228	451
Orange	112	216
Riverside	38	64
San Bernardino	41	83
Ventura	0	0
<b>SCAG total</b>	<b>420</b>	<b>815</b>

SOURCE: SCAG 2007 Regional Travel Demand Model. Los Angeles, CA.

### ***Arterial Street System***

The local street system provides access for local businesses and residents. Arterials account for over 80 percent of the total road network and carry a high percentage of total traffic. In many cases arterials serve as alternate parallel routes to congested freeway corridors. Peak period congestion on the arterial street system occurs generally in the vicinity of activity centers, at bottleneck intersections and near many freeway interchanges. The region's arterial street system is described in **Table 3.14-8**.

**TABLE 3.14-8  
EXISTING (2008) REGIONAL ARTERIAL ROUTE MILES AND LANE MILES BY COUNTY**

County		Route Miles	Lane Miles
Imperial	Principal Arterials	105	401
	Minor Arterials	333	677
Los Angeles	Principal Arterials	2,206	8,665
	Minor Arterials	2,954	9,213
Orange	Principal Arterials	658	3,169
	Minor Arterials	870	3,126
Riverside	Principal Arterials	337	1,207
	Minor Arterials	1,110	3,097
San Bernardino	Principal Arterials	598	1,948
	Minor Arterials	1,564	4,160
Ventura	Principal Arterials	257	892
	Minor Arterials	359	993
<b>SCAG total</b>	Principal Arterials	<b>4,161</b>	<b>16,282</b>
	Minor Arterials	<b>7,190</b>	<b>21,266</b>

SOURCE: SCAG 2007 Regional Travel Demand Model. Los Angeles, CA.

## Public Transit

In Southern California public transit service is comprised of local and express buses, Rapid Bus, urban rail, including subway and light rail principally centered in the core of Los Angeles County, commuter rail that spans five counties and shuttles/circulators that feed all transportation modes and activity centers. Transit service is provided by approximately 30 separate public agencies. Ten of these agencies provide 93 percent of the existing public bus transit service. Local service is supplemented by municipal lines and shuttle services. Private bus companies provide additional regional service.

Metro Rail transit ridership has been steadily increasing as new routes have been added. Commuter rail service has continued to grow steadily since its introduction in 1992, both in service and patronage. A summary of the current service and patronage for the largest transit operators in each county is presented in **Table 3.14-9**.

**TABLE 3.14-9  
KEY STATISTICS FOR MAJOR TRANSIT OPERATORS (2005)**

County	Largest Transit Operator	Average Weekday Boardings	Annual Boardings	Annual Vehicle Revenue Miles(VRM)	Passenger Fares as a % of Operation Expenses*
<b>Fixed Route Bus Service</b>					
<i>Imperial</i>	IVT	970 (est)	258,642	414,683	16.0%
<i>Los Angeles</i>	Metro	1,180,699	377,268,411	92,504,490	30.1%
<i>Orange</i>	OCTA	217,310	67,304,135	32,700,809	25.8%
<i>Riverside</i>	RTA	23,963	7,139,831	9,787,847	20.0%
<i>San Bernardino</i>	Omnitrans	51,619	15,038,153	11,461,994	19.4%
<i>Ventura</i>	Gold Coast Transit	10,225	3,145,890	1,943,740	20.7%
<b>Metro Rail - Subway</b>					
<i>Los Angeles</i>	Metro	111,206	36,272,621	5,876,509	22.1%
<b>Metro Rail - Light Rail</b>					
<i>Los Angeles</i>	Metro	116,497	37,970,291	8,114,242	15.8%
<b>Regional Commuter Rail</b>					
<i>Various</i>	SCRRA (Metrolink)	40,147	10,693,327	9,004,597	43.2%

SOURCE: SCAG 2007

Many people depend on reliable transit service to participate in the economic, cultural and social benefits of Southern California. Transit ridership has increased in absolute numbers, from an all time low in 1995 to an all time high in 2006 (approximately 740 million annual boardings).<sup>2</sup> The recent upward trend can be partially credited to new urban rail system service expansions and the introduction and expansion of Metrolink, the region's commuter rail service.

The largest provider of public transit service in Imperial County is Imperial Valley Transit which serves the cities of Brawley, Imperial, IVC, El Centro, Heber and Calexico. There are approximately

<sup>2</sup> SCAG (2007) Transit Data Collection.

15 routes with multiple trips daily Monday through Friday and a reduced schedule on Saturdays. It is estimated that there were 970 average weekday boardings in 2005, and 16% of the system's operating expenses were recovered through passenger fares.

The largest provider of public transit service in Los Angeles County is the Los Angeles County Metropolitan Transportation Authority (Metro), which carries the majority of total transit patrons in the region (over 1.4 million average weekday boardings). Metro operates a comprehensive network of fixed-route bus routes and an urban light rail system (Metro Rail) and subway. Among the fixed-route bus services operated by the Metro is Metro Rapid Bus, which consists of a simple route layout, frequent service, less frequent stops, low-level buses for fast boarding and exiting, color-coded buses and stop, and bus priority at intersections.

The largest provider of public transit service in Orange County is the Orange County Transportation Authority (OCTA), which operates more than 400 buses on over 70 local and express routes throughout the urbanized portions of Orange County. In 2005, the system experienced approximately 217,000 average weekday boardings, and 26% of the system's operating expenses were recovered through passenger fares.

The largest provider of public transit service in Riverside County is the Riverside Transit Agency (RTA), which is the primary provider of fixed-route and paratransit services throughout a 2,500 square mile service area in the western portion of the county. It operates buses on approximately 40 local and express routes. In 2005, the system experienced approximately 217,000 average weekday boardings (including bus and paratransit boardings), and 20% of the system's operating expenses were recovered through passenger fares.

The largest provider of public transit service in San Bernardino County is Omnitrans, which provides bus and paratransit services in a 480 square mile area in the San Bernardino Valley. It operates a fleet of more than 218 buses over approximately 35 routes. In 2005, the system experienced approximately 52,000 average weekday boardings and 19% of the system's operating expenses were recovered through passenger fares.

The largest provider of public transit service in Ventura County is Gold Coast Transit, which provides bus and paratransit services in the western portion of the county with the cities of Ojai, Oxnard, Port Hueneme, San Buenaventura and the unincorporated areas. It operates a fleet of more than 40 buses over approximately 16 routes. In 2005, the system experienced approximately 10,000 average weekday boardings, and 21% of the system's operating expenses were recovered through passenger fares.

### ***Metro Rail System***

Existing urban rail lines (Metro Rail) are located in Los Angeles County and are operated by Metro. They include the Metro Blue Line from Long Beach to Downtown Los Angeles, the Metro Green Line from El Segundo to Norwalk, the Metro Red Line subway, from Union Station to North Hollywood. The Metro Purple Line subway follows the Red Line from Union Station to Wilshire and Vermont but branches off to Western Avenue (shown in **Map 3.14-3** in the map section at the end of this document), and the Metro Gold Line which runs from Union Station to Pasadena.

The Metro Rail system is operated seven days a week. A system total of 17 route miles of subway (Metro Red Line) and 55 route miles of light rail serves a total of 65 stations (as of mid-2003). Ridership on the Metro Rail system exceeded 74 million boardings in 2005.<sup>3</sup>

### ***Regional Commuter Rail***

Commuter rail service is operated by the Southern California Regional Rail Authority (SCRRA). In October of 1992, the SCRRA began initial operation of the Metrolink commuter rail system on four lines. Service on the initial system was greatly expanded after the 1994 Northridge earthquake. Currently (2005) SCRRA operates 7 routes including five from downtown Los Angeles to Oxnard, Lancaster, San Bernardino, Riverside, and Oceanside, from San Bernardino to Irvine, and from Riverside via Fullerton to downtown Los Angeles. As of September 2007, the system operated 145 trains on weekdays, 48 on Saturdays and 32 on Sundays to 55 stations on 512 route miles. Average weekday ridership is approximately 40,147 passengers.<sup>4</sup>

Amtrak provides significant regional and inter-regional service on the LOSSAN—San Diego to San Luis Obispo corridor (also known as Amtrak's Pacific Surfliner corridor) operating 30 trains (combined weekday and weekend service) from Los Angeles Union Station. Additionally, Amtrak operates three interstate routes within the region (Sunset Limited, Southwest Chief and Texas Eagle) operating an average of 4 trains per day. These regional commuter rail lines are shown in Map 3.14-3 in the map chapter at the end of this document.

### ***Shuttles and Demand-Responsive Services***

One component of the region's public transit system consists of publicly operated or funded demand-response taxis and dial-a-ride services; some open to the general public, others limited to elderly and disabled use. It also includes locally operated or funded shuttle buses (e.g. Los Angeles DASH, Pasadena ARTS, Glendale Beeline, Cerritos on Wheels, El Monte Transit, Riverside Orange Blossom, etc.). Access Paratransit, the largest provider of transportation services for the disabled in the region, operates in the vicinity of fixed-route bus and rail lines in Los Angeles County and extends into portions of the surrounding counties of San Bernardino, Orange and Ventura. These systems serve as local shuttles, internal circulators, connectors to other public transit, or as shoppers' shuttles. Service on these systems is usually limited to a prescribed geographic area.

## **Goods Movement**

Wholesale and retail trade, transportation, and manufacturing support over 3.3 million jobs in the region according to statistics provided by the state's Employment Development Department. Goods movement includes trucking, rail freight, air cargo, marine cargo, and both domestic and international freight, the latter entering the country via the seaports, airports, and the international border with Mexico. Additionally, many cargo movements are intermodal, e.g. sea to truck, sea to rail, air to truck, or truck to rail. The goods movement system includes not only highways, railroads, sea lanes, and airways, but also intermodal terminals, truck terminals, railyards, warehousing, freight

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<sup>3</sup> Los Angeles Metropolitan Transportation Authority. (2007). [http://www.metro.net/news\\_info/facts.htm](http://www.metro.net/news_info/facts.htm), and [http://www.mta.net/trans\\_planning/construction/gold\\_line.htm](http://www.mta.net/trans_planning/construction/gold_line.htm). Accessed May 2003.

<sup>4</sup> Southern California Regional Rail Authority. (2007).

consolidation/de-consolidation terminals, freight forwarding, package express, customs inspection stations, truck stops, and truck queuing areas.

### **Railroads**

The SCAG region is served by two main line commercial freight railroads - the Burlington Northern and Santa Fe Railway Co. (BNSF) and the Union Pacific Railroad (UP). These railroads link Southern California with other U.S. regions, Mexico and Canada either directly or via their connections with other railroads. They also provide freight rail service within California. In 2003, railroads moved approximately 155 million tons of cargo throughout California.<sup>5</sup>

The SCAG region is also served by three short line or switching railroads:

- The Pacific Harbor Line (formerly the Harbor Belt Railroad), which handles all rail coordination involving the Ports of Los Angeles and Long Beach, including dispatching and local switching in the harbor area
- Los Angeles Junction Railway Company, owned by BNSF, which provides switching service in the Vernon area for both the BNSF and UP.
- The Ventura County Railroad, owned by Rail America, Inc., which serves the Port of Hueneme and connects with the UP in Oxnard.

These railroads perform specific local functions and serve as feeder lines to the trunk line railroads for moving goods to and from Southern California.

The two main line railroads also maintain and serve major facilities in the SCAG region. Intermodal facilities in Commerce (BNSF-Hobart), East Los Angeles (UP), San Bernardino (BNSF), and Carson near the San Pedro Bay Ports (UP-ICTF), the Los Angeles Transportation Center (UP-LATC), and the UP-City of Industry yards serve on-dock rail capacity at the Ports of Los Angeles (UP/BNSF) and Long Beach (UP/BNSF).

All of the major rail freight corridors in the region have some degree of grade separation, but most still have a substantial number of at-grade crossings on major streets with high volumes of vehicular traffic. These crossings cause both safety and reliability problems for the railroads and for those in motor vehicles at the affected crossings. Trespassing on railroad rights of way by pedestrians is another safety issue affecting both freight and commuter railroads.

As an example, the Colton Crossing, is an at-grade railroad crossing located south of I-10 between Rancho Avenue and Mount Vernon Avenue in the City of Colton, where BNSF's San Bernardino Line crosses UP's Alhambra/Yuma Lines. In 2000, the Colton Crossing saw on average 90 freight trains per day on the BNSF San Bernardino Line, and 31 freight trains per day on the UP line. By 2010, these numbers are projected to increase by 50%, with an average of 137 BNSF freight trains and 45 UP trains transiting the Colton Crossing on a daily basis.

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<sup>5</sup> Calculated from data provided in: LAEDC. (2005). *California Investment Guide*. Los Angeles, CA.

Another key component of the regional rail network is the Alameda Corridor, a 20-mile, four-lane freight rail expressway that began operations in April 2002. In 2006, an average of 55 intermodal trains per day transited the Alameda Corridor, an approximate increase of 15% since 2005.

### **Heavy-Duty Trucks**

One of the key components of the region's goods movement system is the fleet of heavy-duty trucks, defined as cargo-carrying vehicles with a gross weight rating in excess of 8,500 pounds. Trucks provide a vital link in the distribution of all types of goods between the region's ports (sea and air), railroads, warehouses, factories, farms, construction sites and stores. The size and weight of heavy-duty trucks gives them unique operating characteristics; i.e., they accelerate and decelerate more slowly than lighter vehicles and require more road space to maneuver. Dedicated truck lanes currently exist at two major freeway interchanges: the junction of the Golden State Freeway (1-5) with the Foothill Freeway (I-210) and the Antelope Valley Freeway (SR-14) and at the junction of the San Diego Freeway (I-405) with the Harbor Freeway (I-110). In addition, truck climbing lanes are located on northbound I-5 in northern Los Angeles County.<sup>6</sup>

The trucking industry, including common carrier, private carrier, contract carrier, drayage and owner-operator services, handles both line-haul and pick-up and delivery. The industry uses the public highway system for over-the-road and local service. However it is also served by a considerable infrastructure of its own. This infrastructure includes truck terminals, warehousing, consolidation and trans-loading facilities, freight forwarders, truck stops and maintenance facilities. These various facilities are especially prevalent in the case in the South Bay and Gateway Cities areas, including Wilmington and Carson and extending generally between LAX and the San Pedro Bay Ports, along the I-710 Corridor north to Vernon, Commerce, and downtown Los Angeles, east through the San Gabriel Valley to Industry, Pomona, and Ontario and then to the Inland Empire in Fontana and Rialto as well as in Glendale, Burbank and Bakersfield. Specialized facilities for trucking that provide air cargo ground transport are located around regional airport facilities, notably LAX and Ontario. In 2008, approximately 1.2 million daily heavy-duty truck trips occur in the SCAG region (2.4% of all vehicle trips). Approximately 27% of all heavy-duty truck travel occurs in delay.<sup>7</sup>

### **Maritime Ports**

Southern California is served by three major deep-water seaports. These ports—Hueneme, Long Beach and Los Angeles—accommodate 120 weekly vessel strings handling Asia – North America trade, and are served by the two major railroads and numerous trucking companies in Southern California. The Port of Hueneme, with its recent expansion, ranks as one of the premier automobile and agricultural product-handling facilities in California. The Ports of Long Beach and Los Angeles are full-service ports with facilities for containers, autos and various bulk cargoes. With an extensive landside transportation network, the three ports moved more than 351 million metric tons of cargo in 2006.<sup>8</sup>

<sup>6</sup> *Goods Movement Truck and Rail Study*, (2003). SCAG. Los Angeles, CA.

<sup>7</sup> Year 2003 Model Validation Summary of the Regional Transportation Model. (2007). SCAG. Los Angeles, CA.

<sup>8</sup> Port of Los Angeles 2006 Financial Statement; and Port of Long Beach 2006 Monthly Tonnage Summary Report.

In particular, the San Pedro Bay Ports (Long Beach and Los Angeles) dominate the container trade in the Americas by shipping and receiving more than 15.8 million Twenty-foot Equivalent Units (TEUs) of containers in 2006.<sup>9</sup> Together these two ports rank third in the world, behind Rotterdam and Hong Kong, as the busiest maritime ports.

## Non-Motorized Transportation Network

Biking and walking primarily constitutes non-motorized transportation. Non-motorized transportation plays a bigger role in the densely-populated, mixed-land-use areas of the region. In 2008 biking and walking accounts for approximately 11.9 percent of total trips and 4.9 percent of trips to work or university from home.<sup>10</sup>

The region's bikeways encourage non-motorized travel, serve as recreational facility, and provide inexpensive, environmentally-friendly transportation opportunities. Class I bikeways are separate shared-use paths also used by pedestrians, Class II bikeways are striped lanes in streets, and Class III bikeways are signed routes. Nearly 2,500 miles of Class I and II bikeways exist through the region, as well as mountain bike trails, some of which are also designated for hiking and horseback riding.<sup>11</sup> The City of Los Angeles alone has more than 500 miles of Class I and II bikeways. Bike rack, locker and station programs are ongoing in a number of cities and transit operators. In addition, transit operators are integrating bicycle transportation with transit via bus bike racks, bike-on-train programs and bicycle lockers at transit centers.

Pedestrian access at and near public transit, in most major commercial areas and many residential areas is facilitated by sidewalks, a number of pedestrian malls, and in some cases local jogging and pedestrian trails or paths.

## Regional Aviation System

The SCAG region contains 56 public use airports, including six active commercial service airports, 44 general aviation, two active limited-commercial service (commuter) airports, two former military airfields (now public-use airports) and two joint-use facilities. The existing active commercial service airports (shown in Map 3.14-4 in the map section at the end of this document) handle the majority of passenger air traffic. They are:

- Bob Hope Airport
- Imperial County\*
- John Wayne/Orange County
- Long Beach
- Los Angeles International
- Ontario International
- Oxnard\*
- Palm Springs International

*\*limited commercial service*

In all, some 88 million annual passengers (MAP) were served in the region in 2005, more than double the number served in 1980. The level of air passenger demand is forecast to be approximately 164 MAP by 2035. While none of the individual airports is the largest in the U.S., the

<sup>9</sup> Growth of California Ports – Opportunities and Challenges, A Report to the Legislature, April 2007.

<sup>10</sup> SCAG 2007, Regional Travel Demand Model Results. Los Angeles, CA.

<sup>11</sup> SCAG Draft 2008 Regional Transportation Plan.



region's airports collectively are the busiest of any region in the country. The existing level of activity reflecting air passenger demand (MAP), operations (take-offs and landings or TOAL) and air cargo demand at each of the six existing airports is shown in **Table 3.14-10**. A brief discussion of the location, major access routes and facilities at each of these airports follows. In addition, the six other regional airports at which major improvements and/or conversion to civilian uses are contemplated are also described below.

**TABLE 3.14-10  
EXISTING (2005) ACTIVITY AT MAJOR COMMERCIAL AIRPORTS IN THE SCAG REGION**

	Burbank	John Wayne	Long Beach	Los Angeles	Ontario	Palm Springs	Regional Total
Passenger Volume (,000)	5,512	9,627	3,034	61,489	7,214	1,420	88,296
Percent of Regional Total	6.2%	10.9%	3.4%	69.6%	8.2%	1.6%	100%
Cargo Volume (tons)	52,867	24,073	54,298	2,136,661	576,791	75	2,844,765
Percent of Regional Total	1.9%	0.8%	1.9%	75.1%	20.3%	0.0%	100%
Annual Operations	135,630	349,940	353,011	650,629	143,249	92,853	1,725,312
Average Daily Operations	372	959	967	1,783	392	254	4,727
Percent of Regional Total	7.9%	20.3%	20.5%	37.7%	8.3%	5.4%	100%

SOURCE: Collected from the various airports (2007). SCAG. Los Angeles, CA.

### ***Los Angeles International Airport***

Los Angeles International Airport (LAX), as shown in **Map 3.14-4** in the map chapter at the end of this document, is located in the southwestern portion of the City of Los Angeles, bordered by Arbor Vitae / Westchester Parkway to the north, Interstate 405 to the east, Interstate 105 / Imperial Highway to the south, and the Pacific Ocean to the west. It is surrounded by the communities of Westchester and Playa del Rey to the north; the City of El Segundo to the south; and the City of Inglewood and unincorporated areas of Los Angeles County (Lennox and Del Aire) to the east. Major access routes include Interstate 405 and Interstate 105 and a complex network of surface streets extending throughout the surrounding area, including Sepulveda Boulevard, Lincoln Boulevard, La Cienega Boulevard, Aviation Boulevard, Century Boulevard, Arbor Vitae / Westchester Parkway and Imperial Highway.

### ***Ontario International Airport***

Ontario International Airport (ONT) is located in the southwest section of San Bernardino county within the city of Ontario, approximately two miles east of Ontario's Central Business District between Holt and Mission Boulevards, and between Haven and Grove Avenues, as shown in Map 3.14-4 in the map chapter at the end of this document. Major access routes include Interstate 10 and State Route 60 and the major surface streets in the surrounding area, including Holt Boulevard, Archibald and Vineyard Avenues.



### ***John Wayne Airport***

John Wayne Airport (SNA) is located in the western portion of Orange County, directly south of Interstate 405, one mile east of State Route 55, and one mile north of State Route 73, as shown in **Map 3.14-4** in the map chapter at the end of this document. Major access routes include these freeways and the major surface streets in the surrounding area, including MacArthur Boulevard and Michelson Drive. The majority of the land surrounding the Airport is within the Cities of Newport Beach, Costa Mesa, and Irvine. In addition, the unincorporated community of Santa Ana Heights is located southeast of the Airport.

### ***Bob Hope Airport***

Bob Hope Airport (BUR) is located in the western portion of Los Angeles County, on the west side of the City of Burbank, one mile south of Interstate 5, three miles east of State Route 170, and three miles north of State Route 134, as shown in **Map 3.14-4** in the map chapter at the end of this document. Major access routes include these freeways and the major surface streets in the surrounding area, including Hollywood Way and San Fernando Road.

### ***Long Beach Airport***

Long Beach Airport (LGB) is located in the southern portion of Los Angeles County, in the center of the City of Long Beach, directly north of Interstate 405, and three miles west of Interstate 605, and three miles east of Interstate 710, as shown in **Map 3.14-4** in the map chapter at the end of this document. Major access routes include these freeways and the major surface streets in the surrounding area, including Lakewood Boulevard (State Route 19).

### ***Palm Springs International Airport***

Palm Springs International Airport (PSP) is located in the central portion of Riverside County, in the City of Palm Springs, two miles southwest of Interstate 10 and one mile northeast of Gene Autry Trail (State Route 111), as shown in **Map 3.14-4** in the map chapter at the end of this document. Major access routes include these highways and the major surface streets in the surrounding area, including Ramon Road.

### ***Palmdale Regional Airport***

Palmdale Regional Airport (PMD) is located in northern Los Angeles County, within the north central portion of the City of Palmdale in United States Air Force Plant 42 (AFP 42), one mile north of State Route 138, and three miles east of State Route 14, as shown in **Map 3.14-4** in the map chapter at the end of this document. Major access routes include these highways and the major surface streets in the surrounding area, including 20<sup>th</sup> Street and Avenue P.

### ***San Bernardino International Airport***

San Bernardino Airport (SBD), formerly Norton Air Force Base, is within the City of San Bernardino and is surrounded by unincorporated areas of San Bernardino County and the cities of Redlands, Loma Linda, Highland, and Colton. The Airport is approximately three miles east of Interstate 215, two miles north of Interstate 10, and one mile west and two miles south of State Route 30, as

shown in **Map 3.14-4** in the map chapter at the end of this document. Major access routes include these highways and the major surface streets in the surrounding area, including Tippecanoe Avenue, Mill Street and 3<sup>rd</sup> Street.

### ***Southern California Logistics Airport***

Southern California Logistics Airport (VCV), formerly George Air Force Base, is within the City of Victorville, surrounded by unincorporated areas of San Bernardino County and the cities of Victorville and Adelanto. It is approximately two miles east of State Route 395, and three miles northwest of Interstate 15, as shown in **Map 3.14-4** in the map chapter at the end of this document. Major access routes include these highways and the major surface streets in the surrounding area, including Adelanto Road and Air Base Road.

### ***March Air Reserve Base/March Inland Port***

March Air Reserve Base / March Inland Port (March), formerly March Air Force Base, is located in the western portion of Riverside County east of and adjacent to Interstate 215 and two miles south of State Route 60, as shown in **Map 3.14-4** in the map section at the end of this document. The joint-use facility is bordered by the cities of Moreno Valley to the north and east, Riverside to the northwest, and Perris to the south. Major access routes include these freeways and the major surface streets in the surrounding area, including Van Buren Boulevard and Perris Boulevard.

## **Regulatory Setting**

This section describes the federal and state legal framework within which the 2008 RTP is developed. It also provides a description of the role various governmental institutions play in shaping and using the Plan.

### **Federal Agencies and Regulations**

Under the SAFETEA-LU, the U.S. Department of Transportation (USDOT) requires that the MPOs prepare long range transportation plans. In federally designated non-attainment and maintenance areas, these plans must be updated every four years. SCAG adopted the 2004 RTP in April 2004, and amended it three times, the last being in June 2007. The 2008 RTP is an update to the 2004 RTP and it replaces the 2004 RTP in its entirety.

The federal requirements for regional transportation plans include the following key provisions:

- Plans must be developed through an open and inclusive process that ensures public input and seeks out and considers the needs of those traditionally under served by existing transportation systems.
- Plans must be for a period not less than 20 years into the future.
- Plans must reflect most recent assumptions for population, travel, land use, congestion, employment, and economic activity.
- Plans must be financially constrained and revenue assumptions must be reasonable in that they can be expected to be available during the time frame of the plan.

- Plans must conform to the applicable State Implementation Plans (SIPs).
- Plans must consider projects and strategies, in the local context, that will:
  1. support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
  2. increase the safety of the transportation system for motorized and nonmotorized users;
  3. increase the security of the transportation system for motorized and nonmotorized users;
  4. increase the accessibility and mobility of people and for freight;
  5. protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
  6. enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
  7. promote efficient system management and operation; and
  8. emphasize the preservation of the existing transportation system.

## State Agencies and Regulations

The state requirements largely mirror the federal requirements and the state has adopted extensive RTP guidelines. Key additional state requirements include the following:

- Regional transportation plans must comply with the California Environmental Quality Act (CEQA);
- The first four years of the RTP must be consistent with the four-year State Transportation Improvement Program (STIP) as incorporated into the Regional Transportation Improvement Program (RTIP);
- Program level performance measures that include objective criteria that reflect the goals and objectives of the RTP must be utilized in the development and evaluation of the RTP;
- Finally, the State guidelines also call for three specific elements of RTPs - a policy element, an action element, and a financial element.

## Methodology

This section summarizes the methodology used to evaluate the expected impacts of implementation of the proposed Plan on transportation and associated environmental effects.

The methodology used in this analysis evaluates the Plan from a system-wide perspective at both the county and regional levels using SCAG's Regional Travel Demand Model. SCAG's Regional Travel Demand Model is a sophisticated chain of models that supports the development of the Regional Transportation Plan (RTP), the Regional Transportation Improvement Program (RTIP) and used as input for development of Air Quality Management Plans in the SCAG region, e.g. the South

Coast Air Quality Management Plan (AQMP). The model is a tool for comparisons among alternative transportation system configurations and associated population and employment trip distributions. It should be noted that occurrences that are common but unpredictable such as accidents, transit strikes, and other erratic variables are not included as inputs to the transportation model. Additionally, the model has a margin of error of approximately 5-15%.

Key model inputs to this SCAG model include socio-economic characteristics by Traffic Analysis Zone (TAZ) and detailed descriptions of the existing and proposed transportation networks. Both the socio-economic characteristics and the transportation networks are assumed to change over time, with future conditions including projected land use development and anticipated transportation improvements. The SCAG model covers all urbanized areas in the six-county area (Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura counties).

## Comparison with the No Project

The analysis of transportation resources includes a comparison between the expected future conditions with the 2008 RTP and the expected future conditions if no plan was adopted. This evaluation is not included in the determination of the significance of impacts, however it provides a meaningful perspective on the effects and benefits of the 2008 RTP.

## Determination of Significance

The significance of impacts was determined by applying the significance criteria below to compare current regional transportation conditions to expected future conditions with the Plan. The Regional Travel Demand Model, discussed above, provides performance data for future Plan conditions, and the performance measure output for year 2035 with the Plan was compared to the existing regional conditions for each significance criterion to determine the significance of impacts. The 2035 transportation model output provides a regional and cumulative level of analysis for the impacts of the 2008 RTP on transportation resources.

### *Significance Criteria*

A significant impact is defined as “a substantial or potentially substantial, adverse change in the environment” (Public Resources Code § 21068). The 2008 RTP would have a significant impact if implementation would potentially:

- Generate substantially more total daily Vehicle Miles of Travel (VMT) than the current daily VMT;
- Result in a substantially higher average Vehicle Hours Traveled (VHT) in delay and percent total VHT in delay for all trips compared to the current VHT delay;
- Result in substantially greater average delay and percent of total VHT in delay for heavy-duty truck trips than the current condition;
- Result in substantial decrease in the percent of work opportunities within 45 minutes travel time by personal vehicle or by transit, relative to the existing condition;

- Result in a substantially higher system-wide fatality accident rate for all travel modes compared to the existing condition; or
- Result in a substantially higher system-wide injury accident rate for all travel modes compared to the existing condition.
- Cause a cumulatively considerable adverse effect on regional transportation and associated environmental effects.

## Impacts and Mitigation Measures

Implementation of the 2008 RTP would include implementation of a series of projects that are described in the Project Description (Chapter 2). As discussed in the Methodology and Significance Criteria above, the 2035 transportation system performance is compared to the performance of the existing system (2008) for the purpose of determining the significance of impacts. The RTP itself uses 2003 data to represent existing conditions. This PEIR uses SCAG forecasts to model existing (2008) conditions.

Compared to the existing condition (2008), in 2035 with the implementation of the 2008 RTP, Vehicle Miles Traveled (VMT), and Vehicle Hours in Delay (VHT) for all vehicles and for heavy-duty trucks would increase. The percent of work opportunities within 45 minutes travel time by auto or transit would increase. Fatality and injury accident rates would improve, and could improve more as the California Strategic Highway Safety Plan is implemented.

All mitigation measures should be included in project-level analysis as appropriate. The project proponent or local jurisdiction shall be responsible for ensuring adherence to the mitigation measures prior to construction. For regionally significant projects SCAG shall be provided with documentation of compliance with mitigation measures through its Intergovernmental Review Process in which all regionally significant projects, plans, and programs must be consistent with regional plans and policies.

**Impact 3.14-1: In 2035 there would be substantially more total daily Vehicle Miles of Travel (VMT) than the current daily VMT. Implementation of the 2008 RTP would contribute to this increase.**

Substantial growth and development is anticipated to occur within the region between 2008 (the RTP base year) and today and 2035. Based on SCAG's model results, average daily VMT are expected to grow from 429 million miles in 2008 to 552 million miles per day in 2035. This change constitutes a 28.5% increase over this period and includes light, medium and heavy duty vehicle VMT in all six counties.<sup>12</sup> The increase in VMT would be a significant impact.

The relationship between the VMT in 2035 with implementation of the 2008 RTP and without implementation of the RTP (The No Project alternative) is shown in **Table 3.14-11**. Implementation of the 2008 RTP would reduce vehicle miles of travel in 2035 from 563 million miles (without

<sup>12</sup> SCAG 2007 Regional Travel Demand Model Results. Los Angeles, CA.

implementation of the 2008 RTP) to 552 million miles.<sup>13</sup> However, for the purpose of determining the significance of this impact, conditions with the Plan must be compared to the existing setting.

**TABLE 3.14-11  
DAILY VEHICLE MILES TRAVELED (VMT) IN 2008 AND 2035 (IN MILLIONS)**

	<b>2008 Base Year</b>	<b>2035 No Project</b>	<b>2035 Plan</b>
Imperial	6.0	11.6	11.4
Los Angeles	218.7	259.9	255.8
Orange	73.4	85.6	86.4
Riverside	50.9	85.1	80.5
San Bernardino	61.1	97.9	94.3
Ventura	19.2	23.3	23.2
SCAG Region	429.2	563.3	551.6

SOURCE: SCAG. (2007). *Regional Travel Demand Model Results. Los Angeles, CA.*

### ***Mitigation Measures***

Measures intended to reduce vehicle miles traveled are part of the 2008 RTP. These include: increasing rideshare and work-at-home opportunities to reduce demand on the transportation system, investments in non-motorized transportation and maximizing the benefits of the land use-transportation connection and other Travel Demand Management measures.

- MM-TR-1:** Beyond the currently financially and institutionally feasible measures included in the 2008 RTP, SCAG shall identify further reduction in VMT that could be obtained through land-use strategies, additional car-sharing programs, additional vanpools, additional bicycle programs, and implementation of a universal employee transit access pass (TAP) program.
- MM-TR-2:** Local governments should coordinate controlled intersections so that traffic passes more efficiently through congested areas. Where traffic signals or street lights are installed, require the use of Light Emitting Diode (LED) technology.
- MM-TR-3:** Local governments should promote ride sharing programs e.g., by designating a certain percentage of parking spaces for high-occupancy vehicles, providing larger parking spaces to accommodate vans used for ride-sharing, and designating adequate passenger loading and unloading and waiting areas.

<sup>13</sup> Ibid.

- MM.TR-4:** Local governments should create car-sharing programs. Accommodations for such programs include providing parking spaces for the car-share vehicles at convenient locations accessible by public transportation.
- MM.TR-5:** Local governments should encourage the use of public transit systems by enhancing safety and cleanliness on vehicles and in and around stations, providing shuttle service to public transit, offering public transit incentives and providing public education and publicity about public transportation services.
- MM.TR-6:** Local governments should encourage bicycling and walking by incorporate bicycle lanes into street systems in regional transportation plans, new subdivisions, and large developments, creating bicycle lanes and walking paths directed to the location of schools and other logical points of destination and provide adequate bicycle parking, and encouraging commercial projects to include facilities on-site to encourage employees to bicycle or walk to work.

### **Significance after Mitigation**

Implementation of measures beyond those institutionally and economically feasible measures identified in the 2008 RTP would be expected to reduce VMT, however even with this mitigation, the 2035 VMT would be substantially greater than the existing VMT. Therefore, the increase in VMT would remain a **significant impact**.

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### **Impact 3.14-2: In 2035 there would be substantially higher average Vehicle Hours Traveled (VHT) in delay than the current condition. Implementation of the 2008 RTP would contribute to this increase.**

As detailed in **Table 3.14-12**, total daily VHT in delay are expected to grow from 14.1 million person-hours in 2008 to 19 million person-hours in 2035. This constitutes a 35% increase from conditions in 2008 and includes light, medium and heavy VHT in all six counties.<sup>14</sup> The increase in daily VHT spent in delay would be a significant impact.

Vehicle Hours in delay for heavy-duty trucks also show an increase when compared to 2008; a 168% increase with the No Project Alternative and a 111% increase with the Plan.

### **Mitigation Measures**

Measures intended to reduce vehicle hours of delay are part of the 2008 RTP. These include: system management, increasing rideshare and work-at-home opportunities to reduce demand on the transportation system, investments in non-motorized transportation, maximizing the benefits of the land use-transportation connection and key transportation investments targeted to reduce delay. Further reduction in VHT in delay would be obtained through the measure described for **Impact 3.14-1**.

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<sup>14</sup> SCAG. (2007). *Regional Travel Demand Model Results*. Los Angeles, CA.

**TABLE 3.14-12  
DAILY HOURS OF DELAY (VHT) IN 2008 AND 2035 (IN MILLIONS)**

	2008 Base Year	2035 No Project	2035 Plan
<b>All Vehicles and Trucks VHT in Delay (person-hours)</b>			
Imperial	0.1	0.3	0.3
Los Angeles	7.9	10.2	9.7
Orange	2.4	3.1	3.1
Riverside	1.4	3.4	2.7
San Bernardino	1.6	3.2	2.6
Ventura	0.6	0.8	0.7
Regional	14.1	21.0	19.0
<b>Heavy Duty Trucks VHT in Delay (vehicle-hours)</b>			
Imperial	0.001	0.003	0.002
Los Angeles	0.122	0.244	0.217
Orange	0.034	0.061	0.057
Riverside	0.024	0.117	0.078
San Bernardino	0.032	0.154	0.098
Ventura	0.007	0.015	0.014
Regional	0.221	0.593	0.467

SOURCE: SCAG. (2007). *Regional Travel Demand Model Results*. Los Angeles, CA.

### Significance after Mitigation

Implementation of measures beyond those institutionally and economically feasible measures identified in the 2008 RTP would be expected to reduce VHT spent in delay for all vehicles, however even with this mitigation, the 2035 total vehicle VHT in delay would be substantially greater than the existing VHT in delay. Therefore, the increase in total vehicle VHT in delay would remain a **significant impact**.

**Impact 3.14-3: In 2035 there would be substantially greater average daily VHT in delay for heavy-duty truck trips than the current condition. Implementation of the 2008 RTP would contribute to this increase.**

As detailed in **Table 3.14-12**, total daily heavy-duty truck trip VHT in delay are expected to increase from 221,000 average daily heavy-duty truck vehicle hours of delay in 2008 to 467,000 hours in



2035. This constitutes a 113% increase from conditions in 2008.<sup>15</sup> The increase in daily heavy-duty truck trip VHT spent in delay would be a significant impact.

For the region and each county, the relationship between the daily heavy-duty truck trip daily VHT in delay with implementation of the 2008 RTP and without implementation of the RTP (the No Project alternative) are shown in Table 3.14-12. Implementation of the 2008 RTP would reduce daily heavy-duty truck hours of delay in 2035 from 593,000 hours (without implementation of the 2008 RTP) to 467,000 hours.<sup>16</sup> However, for the purpose of determining the significance of this impact per CEQA, conditions with the Plan must be compared to the existing setting.

### ***Mitigation Measures***

Mitigation measures intended to reduce daily heavy-duty truck vehicle hours of delay are part of the 2008 RTP. These include: goods movement capacity enhancements, system management, increasing rideshare and work-at-home opportunities to reduce demand on the transportation system, investments in non-motorized transportation, maximizing the benefits of the land use-transportation connection and key transportation investments targeted to reduce heavy-duty truck delay. Further reduction in VHT in delay for *all* vehicles would be obtained through the implementation of the measures described for **Impact 3.14-1**.

### **Significance after Mitigation**

Implementation of measures beyond those institutionally and economically feasible measures identified in the 2008 RTP would be expected to reduce VHT spent in delay for heavy trucks, however even with additional mitigation, the 2035 heavy-duty truck VHT in delay would be substantially greater than the existing VHT in delay. Therefore, the increase in heavy-duty VHT in delay would remain a **significant impact**.

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### **Impact 3.14-4: Implementation of the 2008 RTP would contribute to an increase in the percent of work opportunities within 45 minutes travel time by personal vehicle or by transit in 2035, relative to the existing condition.**

In 2008 approximately 79% of the evening work trips take 45 minutes or less by auto and 42% occur within 45 minutes by transit. In 2035, with the implementation of the Plan, 80% of evening work trips by auto would be 45 minutes or less and 45% of transit trips would occur within 45 minutes.<sup>17</sup> Evening work trips are used for this measure as this is the portion of the day prone to the most delay. 45 minutes is used as a benchmark to account for reasonable commute lengths for both the auto and transit modes.

For the region and each county, the relationship between the percent of work opportunities within 45 minutes travel time with implementation of the 2008 RTP and without implementation of the RTP (No Project alternative) are shown in **Table 3.14-13**. Implementation of the 2008 RTP would increase

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<sup>15</sup> Ibid.

<sup>16</sup> SCAG 2007 Regional Travel Demand Model Results. Los Angeles, CA.

<sup>17</sup> Ibid.

the percent of work opportunities within 45 minutes travel time by auto in 2035 from 76% (without implementation of the 2008 RTP) to 80% (with the Plan) in 2035. The percent of work opportunities within 45 minutes travel time by transit in 2035 would increase from 40% (without the Plan) to 45% (with the Plan).<sup>18</sup>

**TABLE 3.14-13  
PERCENTAGE OF EVENING WORK TRIPS COMPLETED WITHIN 45 MINUTES**

	2008 Base Year	2035 No Project	2035 Plan
<i>Auto</i>			
Imperial	96%	96%	98%
Los Angeles	75%	72%	75%
Orange	83%	79%	82%
Riverside	86%	80%	87%
San Bernardino	82%	79%	83%
Ventura	86%	83%	85%
Region	<b>79%</b>	<b>76%</b>	<b>80%</b>
<i>Transit</i>			
Imperial	48%	58%	36%
Los Angeles	42%	40%	44%
Orange	42%	40%	38%
Riverside	49%	54%	55%
San Bernardino	44%	53%	48%
Ventura	31%	29%	29%
Region	<b>42%</b>	<b>40%</b>	<b>44%</b>

SOURCE: SCAG, 2007 *Regional Travel Demand Model Results*. Los Angeles, CA.

When compared to the base year, the percent of work opportunities within 45 minutes travel time by auto in 2035 from 79% (2008) to 80% (with the Plan) in 2035 and from 42% (2008) to 45% with the 2035 Plan.

### ***Mitigation Measures***

The impact would be beneficial. No mitigation measures are required.

#### **Impact 3.14-5: Implementation of the 2008 RTP would contribute to a lower system-wide fatality accident rate for all travel modes in 2035 compared to the existing condition.**

The system-wide daily fatality rate would be 0.39 fatalities per million persons for all travel modes, including transit and rail. This fatality rate is close to the existing (2008) rate (**Table 3.14-14**). The impact would be neutral. The 2008 RTP includes Transportation System Management strategies that

<sup>18</sup> SCAG 2007 *Regional Travel Demand Model Results*. Los Angeles, CA..

improve safety through reducing the concentration of weaving and merging, and that clear existing incidents and accidents more quickly, among other measures.

The injury rate to people in the region as a result of vehicular and transit-related accidents for the 2035 Plan is lower than the existing rate by 1.7%. The No Project alternative is 3.6% greater than 2008.

**TABLE 3.14-14  
2008 AND 2035 REGIONAL TRANSPORTATION SYSTEM ACCIDENT RATES**

(Daily per million persons)	2008	2035 No Project	2035 Plan
<i>Fatalities</i>	0.39	0.41	0.39
<i>Injuries</i>	16.8	17.4	16.5
System Metrics (2007) and SWITRS Collected in 2007 as part of California Strategic Highway Safety Plan			
SOURCE: SCAG. (2007). <i>Regional Travel Demand Model Results</i> . Los Angeles, CA.			

### ***Mitigation Measures***

The impact would be neutral. No mitigation measures are required. Implementation of the California Strategic Highway Safety Plan could reduce transportation related fatalities in the region indicated in the 2008 RTP.

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#### **Impact 3.14-6: Implementation of the 2008 RTP would contribute to a lower system-wide injury accident rate for all travel modes in 2035 compared to the existing condition.**

The system-wide daily injury rate would be 16.5 injuries per million persons for all travel modes, a decrease of 0.3 daily injuries per million persons when compared to the existing rate of 16.8 (Table 3.14-14). The 2008 RTP includes Transportation System Management strategies that improve safety through reducing the concentration of weaving and merging, and that clear existing incidents and accidents more quickly, among other measures.

### ***Mitigation Measures***

The impact would be neutral. No mitigation measures are required. Implementation of the California Strategic Highway Safety Plan could further reduce transportation related fatalities in the region and is referenced in the 2008 RTP.

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#### **Cumulative Impact 3.14-7: Implementation of the 2008 RTP would contribute to a cumulatively considerable amount of transportation impacts, such as VMT and all-vehicle VHT in delay, to counties outside of the SCAG region.**

The 2035 transportation model includes the population, households, and employment projected for 2035, and therefore the largest demand on the transportation system expected during the lifetime of the 2008 RTP. In accounting for the effects of regional population growth, the model output provides a regional, long-term and cumulative level of analysis for the impacts of the 2008 RTP on transportation resources. Forecast urban development and growth that would be accommodated by the transportation investments in the 2008 RTP, together with the increased mobility provided by the 2008 RTP would contribute to the significant impacts described in Impacts 3.14-1, 3.14-2, and 3.14-3 above. The regional growth, and thus cumulative impacts, are captured in the VMT, VHT, and heavy-duty truck VHT data reported for the above impacts.

As the population increases through 2035, the number of trips originating and ending in Santa Barbara, San Diego and Kern counties to and from the SCAG region would increase. The transportation demand from growth, in combination with the accommodating projects in the 2008 RTP would contribute to a cumulatively considerable transportation impact in these other counties.

The projects and measures designed to minimize VHT and VMT that are included in the 2008 RTP, and MM-TR.1 through MM-TR.6 would minimize this effect. However the regional contribution would remain **significant**.

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## Comparison With the No Project

Comparison with the No Project is included in the discussion of each impact (3.14-1 through 3.14-6 above). The transportation impacts of the 2008 RTP would be less than those of the No Project Alternative.

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